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ABSTRACT

Trait-factor theory, developmental/self-concept theory, personality theory, and behavioral theory are some of the major theories of career development. The first three (trait-factor, developmental/self-concept, and personality) have ties to the gestalt school because of the emphasis on the individual's relationship to the environment. Anne Roe's personality theory of career development integrates the concept of acting in response to and interacting with the environment. Goodstein's and Krumboltz and Thoresen's behavioral theories embody behavioral concepts portraying the client as a reactor, in a need/anxiety state or problem identification made because of early conditioning. The implications for career educators in two-year colleges involve these issues: (1) the need to serve full-time and part-time students of all ages; (2) the need to provide career development to students in the maturity spectrum from early dualism to commitment on the Perry Scheme; and (3) the need to fund student services in a time of retrenchment. A simple delivery system of career planning services is needed. Holland's Self-Directed Search seems suitable for these students. The outcomes of this instrument can be discussed at face value or used as a springboard for career decision-making. All two-year college educators helping students with career decision-making and planning should be aware of the theoretical bases of modern career development and be prepared to aid students in their development. (ABL)

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Learning Theories, Career Development Theories, and Their Applications at Two-Year Colleges

The study of humans, and particularly the way humans think and learn, has occupied scholars and philosophers since at least as far back as the ancient Greeks. The works of Plato, Aristotle, and other Greek philosophers contain the seeds of current philosophies, including those branches which constitute the learning theories and practices which concern educators today. (Snelbecker, 1974)

Practitioners of higher education - faculty, staff and administrators alike - face the task of educating a student population unique in its diversity. Serving and teaching these students, helping them to set educational and vocational goals and then achieve them, have made it necessary for college educators to review their roles, philosophies and techniques.

Beginning in the 1960's, colleges saw the beginning of an influx of a rich mixture of students, the likes of which had not been seen before on campuses. Factors leading to the increased enrollment of the new students were, among others, the war in southeast Asia and the draft deferment for college men, the Women's Movement, a new spirit of egalitariarism leading to open admissions policies, the Civil Rights movement, the burgeoning student population, and the adult education movement with emphasis

on life-long learning. (Stadtman, 1980) Educators, no longer teaching just the elite, looked for theoretical and practical ways to work with their new students - often educationally underprepared, and academically and economically disadvantaged.

Also, the first generation of young people reared since infancy on television entered the colleges. (Cohen, 1983) Until this time college learning had been based on textbook reading. But this new group's main method of taking in information was through nonprint media. They valued reading and writing very little and did both poorly, as a rule. Few instructors, verbal and literate themselves, knew how to teach them.

The new population of diverse, in some cases ill-prepared, students entered college in record numbers in the 1960's and 1970's. New facilities were built, programs added, faculty and staff hired. Along with the issues of accomodating the new students came the problem of keeping them. Attrition became a major concern. Colleges and universities formed task forces and standing committees to study and try to deal with the high attrition rates on their campuses.

Retention studies were conducted by the hundreds. One finding, common to many studies, was that those students who were undecided about their career goals were more likely to drop out than those who had made a career decision. (Morgan, 1979; Willner, 1982) Many institutions strengthened their career advising functions by adding career planning programs or by strengthening existing

functions. (Stadman, 1980)

Thus, to both ends - serving the burgeoning population of diverse students and keeping them, once enrolled - colleges looked for ways to improve and adapt instruction and services. Staff development activities were planned and carried out to meet these needs. Developmental and compensatory education divisions were formed and enhanced. Educators turned back to the basic learning theories for guidelines to help in their mission. And faculty, advisors and counselors went to the basic theories of career development to build programs to help students with career decision-making and career planning in an effort to help them set career goals and then stay in college to reach those goals.

To synthesize these processes this paper will, first, review the basic learning theories - gestalt learning and behaviorism; second, review the basic theories of career development and then integrate them for application on a 2-year college campus.

The purpose is three-fold: first, to identify learning theories, which, developed into strategies, can most effectively be used with a two-year college student population. The second purpose is to isolate those career development theories which, developed into career planning strategies, seem most effective with 2-year students.

The third purpose is to integrate the first two into a career planning model for two-year college students, taking into account

their diversity and commonalities. The end result, if applied and implemented, could help two-year college students design their educational/career plans, successfully complete their academic programs and achieve their career/life goals.

Review of the Basic Learning Theories

As noted by Fincher (1985) to review the relationship between learning theory and research and higher education, and draw from studies of the psychology of learning is timely and relevant to teaching and learning in colleges today. Fincher observes further that traditional modes of learning and teaching have never been given "a stronger or more timely reprieve." (Fincher, 1985, p.79)

To begin this review it is necessary to define the two major families of contemporary learning theory. Generally speaking, and allowing for branches, divergences and sub-specialties, they are the behaviorist family of stimulus-response conditioning theories and the gestalt family.

The principle difference between the two is the place of the learner in the theory - the learner's place in the behaviorist school is that of passive reactor to stimuli in his internal/external environment, while the gestalt-field theorists see the learner as interactive - reacting to the environment while at the same time

affecting it, all the while gaining insights.

To trace the development of the behaviorist and gestalt learning theories, it is necessary to explore their mutual roots, going back to 1879, the date Wilhelm Wundt founded at Leipzig the first laboratory specifically designed for psychological experiments. (Snelbecker, 1974) Although Wundt's founding date serves a useful purpose as a benchmark in psychological history, it cannot be said that all psychological developments began with Wundt, and it is necessary to go back before Wundt to review the historical origins that influenced him and his contemporaries, and that are still considered influential in modern thinking about learning.

Historically, modern learning theory is considered to have started with Thorndike. To discuss his theory, it is necessary to trace the origins of two separate philosophical trends brought together in Thorndike's concepts. (Snelbecker, 1974)

These two areas of philosophical thinking are hedonism and associationism, or psychologically speaking, those behavioral aspects that are motivational and those that concern learning.

Hedonism is the theory that an organism always acts in such a way as to seek pleasure and avoid pain. The ancient Greeks, embodied in Plato, compared the behavior of humans and animals and concluded that humans, possessing reason and free will, could overcome the sensual aspects of existence - unlike animals which are dominated by the pleasure/pain principle.

Generations of scholars grappled with the issues raised by the Greeks. How could the discrepancy between humans' sensual and rational aspects be resolved? Descartes theorized a type of dualism of mind and matter, the two interacting in a specified manner. That an organism's behavior is at least partly determined by the consequences of its behavior can be traced through the history of Western philosophy. (Snelbecker, 1974)

Herbert Spencer developed a theory of behavior that was an extension of Charles Darwin's theory of evolution. Part of Darevin's theory is the premise that one critical aspect of any behavior or characteristic of a species is its survival value; that is, those behaviors which enhance a specie's ability to survive and persist will be carried on through the generations. To this Spencer added pleasure and pain. He argued that logic dictates that natural selection would tend to foster a relationship between that which aids survival and that which brings pleasure. Consequently, an organism will act because of the pleasure an activity brings and in doing so will foster its own survival

The pleasure/pain principles are obvious and any theory explaining human behavior must include hedonism. But, obviously, hedonism alone does not account for all or even most behavior. There must be an explanation for the mind's ability to retain some learned material and its tendency to let other information go.

To examine this, we turn to the philosophical position known

as associationism - the linkage or association of elements of learning in such a way that the occurrence of one will result in or produce the other. The development and integration of this into philosophy can again be traced back to the Greeks, but the primary development of this school occurred with a group of British philosophers, usually called the British associationists.

General to British associationism is the basic premise that the mind works under rules and laws similar to the mechanistic laws that govern physical happenings. Physical laws such as Newton's gravitational laws or Boyle's chemical laws describe what happens under certain specified conditions. These laws are descriptive, rather than philosophical or theological, and by observing the ways the mind works its laws can be deduced in the same way, posited the associationists.

Thomas Hobbes is usually considered the founder of associationism, although it was more comprehensively developed by others, most notably John Locke, David Hume, and John Stuart Mill. John Locke coined the phrase "the association of ideas." (Snelbecker, 1974)

To Locke the mind is a blank slate at birth ("tabula rasa") written on by experience-source of all knowledge. Experience comes through sensations which form simple ideas; next the mind combines simple ideas into complex ones and consquently performs the activities demanded of it.

Essentially, this describes a type of mental chemistry

where the basic units are simple physical and mental sensations which, through association, are linked together to form immensely complex concepts. John Stuart Mill, the 19th century philosopher and economist, theorized that some kind of "mental chemistry" must occur in idea formation. He deduced that simple ideas come from sensations and memories, and that complex ideas form from combinations of simple ideas. He recognized that complex ideas may sometimes be simple ideas summed or chained together, but that probably more often complex ideas are "generated" by simple ideas. (Snelbecker, 1974)

Associationism or a variant of it represents a major component of modern psychology. It was an important part of most late nineteeth and early twentieth century psychology textbooks. William James, philosopher and psychologist, wrote the book which, for many years, served as the primary textbook for American psychology. He devoted an entire chapter to associationism, discussing it much as Aristotle had, in terms of the three laws of contiguity, similarity, and contrast.

The philosophical origins of learning theories, then, certainly contain hedonism and associationism. Modern theorists and practitioners may not always recognize the origins of the theories they practice, but they would be well-served to examine their roots for a better understanding of modern-day practices.

As previously mentioned, 1879, the date Wilhelm Wundt

founded his psychological laboratory in Leipzig, is generally regarded to be the date of the beginning of psychology as a science. Many of the psychologists instrumental in developing the new psychology of learning theories worked in Wundt's institute. For Wundt, a philosopher, physiologist and psychologist, the essence of the study of psychology was to be experimentation that was to solve problems of the mind that philosophers had raised before but could not answer. It was to be the "science of experience" and was to deal with the following: (1) the analysis of conscious processes into the most fundamental, irreducible elements; (2) the determination of the manner of connections among these elements; and (3) the determination of the laws of these connections. (Snelbecker, 1974) It was the goal of Wundt and his associates to study the fundamental elements, or "atoms" of mental experience.

Wundt and his associates used the research procedures known as introspection - their subjects' observations and recordings of their sensations and perceptions, their mental experiences, of stimuli. Their subjects were carefully trained to identify the "elements" of their experiences - the longness, thinness, yellowness, flatness, pointedness of a pencil, for example - those experiential sensations which make up the total experience of "pencil."

Wundt's research did not concern itself with learning,

but rather with topics such as sensation, perception, emotion, reaction time and general relationships between the physical world and our conscious experiencing of them. All of Wundt's institute's work was concerned with the workings of the mind.

Wundt's student, Edward B.,Titchener brought the Leipzig type of psychology to the United States where he began one of the first psychological laboratories at Cornell.' (Snelbecker, 1974) Structuralism was the name given to his brand of psychology since he, like Wundt, was interested in the analysis of consciousness into its elements or its structure. Titchener's structuralism dominated American psychology around the turn of the century. He identified psychology as a pure, rather than applied, science whose subject was the normal human adult. As with Wundt, the main objective was to analyze and identify the contents of consciousness. Introspection again was the main means and standard of research methods, and great emphasis was placed on training subjects to be keen, objective observers and reporters of their experiences. One of Titchener's fundamental assumptions was that even complex conscious states are made of simple components, and that different combinations of basic elements ("mental atoms") go together to make up cognitive experiences such as perception, imagination, emotion and thought.

The structuralists hoped to be able to find and classify

these mental atoms through introspection as a scientific method of observation. They thought it apparent that any situation consists of conscious experiences which include various interpretations as well as the fundamental mental atoms. Central to any experience is some combination of three elements - sensations, images and affections. Only through extensive and intensive training and concentration could the introspectionist identify these elements.

Structuralism, almost a religion to its adherents, gathered a group of critics. Because it was almost entirely based on introspective analyses of mental contents, it was easily prone to certain inherent flaws. Data from such analyses were supposedly reliable and objective, with correctly trained observers, but in practice this was elusive, and dissension erupted among the laboratories. (Snelbecker, 1974)

One of the schools which emerged in reaction to structuralism was behaviorism, a school initially influenced by John B. Watson. Watson thought that behavior, not consciousness or mind, should be the proper study of the new psychology. Moreover, he denounced the introspective method of research as being so subjective that it could have no place in the objective science of psychology. (Snelbecker, 1974)

Watson relied heavily on the neurological concept of the

reflex, and developed a psychology which studied an organism's response to stimuli. Consequently, the "S-R" (stimulus-response) formula came to be used as the main paradigm for the new science of psychology known as behaviorism. (Snelbecker, 1974) Watson thought that identifying the reflex-like stimulus-response units which comprise behavior would lead to understanding all complex events, including "mental experience" and cognitive activities.

Drawing from Pavlov's studies, Watson was so committed to his science and so confident in its efficacy that he stated that he could "get any response of which a learner is capable associated with any situation to which he is sensitive. (Bigge, 1982, p.53)

Another important reaction against structuralism was functionalism, founded by John Dewey. Functionalists were interested in humans' activities, not just in their mental experiences but mainly in the functions they serve in helping individuals adapt to and cope with their environment. Broadening psychology's field to cover all human and animal behavior, functionlists accepted introspection as one method of research but they also insisted upon controlled objective observations as well. They were affected by Darwin's beliefs that members of a environmental changes. Thus, the psychological notion that behavioral changes (learning) can be understood in terms of their degree of success in the organism's attempt to cope with

its environment was born.

Functionalism is noteworthy for two other reasons, both of which originate in the ideas of an organism's interacting dynamically with its environment. First, common-sense notions were not automatically rejected, but were looked at with emerging scientific information. Consequently, the dichotomy between the scientific laboratory and the world outside was beginning to break down.

Second, the distinction between pure and applied science was not sharp, and the idea spread that an individual's behaviors and experiences cannot be separated completely from the purpose and consequences of an individual's activities.

While the American psychologists were establishing their bases of scientific and psychological study based on a stimulus-response paradigm, developing in Europe was a movement objecting to the scientific "reductionism" going on in the United States. Three German psychologists - Kurt Koffka, Wolfgang Kohler, and Max Wertheimer led the reaction to the American trend of studying complex behaviors by reducing them to their smallest components. Kurt Lewin, an American psychologist, also was closely associated with the gestalt movement.

The German word "gestalt" is untranslatable; the closest English synonyms are "configuration" or "pattern." (Bigge, 1982) The gestalt psychologists' central and essential point is that

the whole is not merely the sum of its parts. They thought that the American psychologists and other scientists were wrong in emphasizing "basic, fundamental "elements" for study, and they contended that it was the organization, or patterning, that psychology should emphasize.

Gestalt psychology flourished during the era around the turn of the century when the great heredity-environment debate was ongoing. The gestalt psychologists took the stand that most human capacities are the result of heredity. The behaviorists contended that what one does is a function of learning. While the behaviorists contended that learning could, and must, be studied in stimulus-response units, the gestalt psychologists insisted that complex cognitive activities must be studied in entirety. (Snelbecker, 1974)

At this point it is appropriate to discuss the contribution of Kurt Lewin, the German-American psychologist credited with major contributions to gestalt psychology. Lewin was interested primarily in studying human motivation; consequently his theory was developed not as a learning theory but as a theory of motivation and perception. His basic concept was lifespace. Consequently, lifespace has become the basic model for relativistic psychological thinking, including everything one needs to know about a person to understand his behavior in a specific

psychological situation at a given time. Thus, life space refers to the person under consideration and his psychological environment. (Bigge, 1982)

The influence of the two basic schools of psychology - the stimulus-response and the gestalt theorists - dominated research during the period from the turn of the century through the first few decades of the 1900's. But by the 1930s the schools were losing their dominant programs focused on central psychological processes such as learning, motivation and perception, and the theorizing processes were also developed around these basic psychological processes.

It was at this point that learning theories emerged as dominant influences on research. The influence of the early behaviorists, gestaltists and associationists is still evident, and despite the recent dominance of cognitive psychology (to be discussed later), the issues raised by Thorndike, Watson, Guthrie, Hull, Tolman, Lewin and Skinner cannot be ignored. (Fincher, 1985)

As we turn to a discussion of the major learning theories developed from the 1930s to the present, it is important to point out that there was no neat, crisp delineation between the time of the dominance by the schools of psychology at the takeover by the learning theorists. Many seminal studies upon which the theorists built their theories were conducted in the late nineteenth and early twentieth century. But it was apparent

that by the 1930s and 1940s the comprehensive learning theories predominated. (Snelbecker, 1974)

Several patterns had developed as a result of the work of the psychologists. First, there was almost universal agreement that psychology should be based upon scientific experimentation. Second, introspection as a research method and the mind as main focus were losing popularity, with new trends emphasizing objective experimentation and behavioral observation as the main focus coming to prominence. Third, learning processes took an integral role in experimental psychology through the influence of behaviorism and functionalism. Fourth, although the gestalt group maintained their interest in studying complex cognitive processes, the time was right for a stimulus-reponse analysis of behavior. And fifth, most of the research on learning processes was conducted as basic science ventures rather than as applied science because of the controversy over psychology as science, with direct intention to deal with practical patterns in education. Also, in the early 1920's psychologists in this country were being asked to assist in the resolution of social problems. (Snelbecker, 1974) This factor may also help to account for the focus on educational concerns.

The era between 1930 and 1950 saw the development of the comprehensive learning theories dominate theory construction in

psychology. The learning theories to be discussed fall into the two basic groups - stimulus-response, or conditioning theories, and cognitive theories. It is important to note that these two broad categories contain many various sub-groups, and sometimes the differences among the sub-groups seem greater than the differences between the two main classifications.

Stimulus-response conditioning theorists describe learning as conditioning or reinforcement of behavior. The organism is regarded as nonpurposive; learning is habit formation. (Bigge, 1982) Their theories typically emphasize objective analyses of behavior to derive learning theories, and they usually assume that one can understand complex learning processes best after studying and understanding simpler learning processes. Conditioning theorists tend to characterize psychology as a natural science and emphasize that its task is to search for lawfulness of an organism's behavior in a specific situation. They are accused by cognitive theorists of characterizing learning as mechanistic and automatic, but they contend that there is nothing mechanistic implied in searching for order in nature. (Snelbecker, 1974)

Most conditioning learning theories have come from two traditions - instrumental conditioning, derived from the work of Edward L. Thorndike, and classical conditioning, primarily taken from the work of Ivan P. Pavlov.

In instrumental conditioning the chief assertion is that behavior is controlled by its consequences and that we learn to do that which produces pleasure or benefit and to avoid that which has unpleasant effects. More specifically, the organism's response will change based upon the principle of feedback - that is, a response which results in the reduction or satisfaction of a need or drive stimulus increases the probability of future responses of the same kind that the organism exhibited before being fed, watered, praised or any other reinforcing event. (Bigge, 1982)

Classical conditioning, on the other hand, depicts the stimuli as moving the organism to action. Neutral stimuli acquire ability to control behavior and thus cause learning by being paired with a stimulus which is already capable of eliciting such a response. In other words, an "adhesive principle" takes effect in that a response is attached to neutral stimulus through the neutral stimulus occurring just before the stimulus capable of eliciting the desired response. (Bigge, 1982)

Cognitive learning theories emphasize thinking, language, problem solving - complex intellectual processes - as major aspects of learning. During most of the first half of this century the cognitive theories served mostly as critics to and

corrections of the stimulus-response and conditioning theories, but there were some attempts to develop comprehensive learning theories within the cognitive tradition. (Snelbecker, 1974) One of the earliest was the result of work by the aforementioned classical gestalt group - Koffka, Kohler and Wertheimer. Another cognitive theory developed by Edward C. Tolman was noteworthy for two reasons: first, as a cognitive theory, it was clearly behavioristic and it was developed parallel to stimulus-response models; second, it was at the center of the debates that raged in the 1930s and 1940s concerning the best way to build comprehensive learning theories. (Snelbecker, 1974)

Common to most cognitive learning theories is that learning is the development of insights which provide a guide for behavior. (Bigge, 1982) Additionally, learning phenomena are closely related to perception. Learning is defined in terms of the reorganization of a learner's "field", that is, his perceptual and/or psychological world. It is a dynamic process whereby, through interactive experience, insights, or cognitive structures of life spaces or fields "are changed so as to become more serviceable for human guidance." (Bigge, 1982, p. 216)

In the 1930s and 1940s several major learning theories became prominent. Several of the leading theorists of this era and their theories will be discussed in the next part of this paper.

Edward Thorndike was perhaps the most influential of all the psychologists conducting research and writing during this era. His "connectionism" was an eclectic theory, borrowing elements from Herbart's "idea associationism" and concepts from physiological psychology from his studies of the behavior of chickens, dogs, and cats. (Bigge, 1982) Thorndike published hundreds of books, papers and monographs on a variety of basic and applied psychology topics. He began his work at a time when psychology was less behaviorally defined than it is today and when his contemporaries were attempting to value appropriate research procedures. Thorndike believed that it should be possible to conduct rigorous research, insisting that psychology must be more empirical than speculative. Thorndike's biographer, Jancich, wrote that Thorndike believed that psychology no longer needed to be a branch of philosophy. It was ready to become a rigorous science, adapting the appropriate methods of the physical sciences, worthy of the credentials of objectivity and verifiability. (Snelbecker, 1974)

Of particular interest to Thorndike was how humans and animals learn, referring to changes in their behavior enabling them to adapt to and cope with their environment. To study learning processes more systematically he typically placed his animal subjects in problem situations and observed their behaviors when they escaped. He concluded that the animals had not "thought through" their solutions but had by "trial

and error" attempts chanced upon successful solutions. After stumbling on a successful solution they refined and fine-tuned their strategies.

He theorized that successful acts are strengthened by being followed by pleasurable effects; that is, learning is the strengthening or weakening of "bonds" or "connections" between situations and how an organism acts in them. Thorndike's law of effect states that behaviorism is primarily influenced by its effects, so that acts followed by satisfaction are increased. He theorized that satisfying effects strengthen connections between a situation and how one acts there. (Snelbecker, 1974)

During the same time Thorndike was doing his research in the United States, Russian physiologist Ivan P. Pavlov was doing experimental research on the digestive systems of animals. His work involved "sham feeding" in which food was placed on dogs' tongues to stimulate salivation so that various physiological processes could be observed. Pavlov discovered that the animals frequently salivated as soon as the experimenters came into the room, before any food was given the dogs. He became so excited by the prospects of this observation that he changed the thrust of his research to explore this phenomenon.

Thinking he was studying an aspect of physiology, he designed his research to attempt to understand the behavior of

an animal in precise physiological terms. But the nature of his work and his impact on psychology is such that most historians regard it as a new venture in psychology and a major focus of research on learning processes. (Snelbecker, 1974)

Pavlov's fundamental assumption was that all nervous activity and brain-behavior relationships can be understood in terms of reflex activity. A reflex consists of a stimulus applied to an organism which evokes, involuntarily, a specific response. Pavlov identified two types of reflexes - conditioned and unconditoned. By unconditioned reflex, Pavlov meant a definite inborn capacity of an organism to respond to a stimulus in a specific way. By contrast, the conditioned reflex occurs as the result of experience. Pavlov saw the conditioned response as a paradigm not only to dog salivation or even to simple processes alone. He saw it as a fundamental conceptual device by which one can understand all forms of complex learning and human behavior. (Snelbecker, 1974)

The work of Edwin R. Guthrie was influenced by the work of Thorndike and Pavlov. It proposed the "nonreinforcement" learning concept, it originated the notion of the "stimulus-sampling" concept of learning processes, and it was one of the first theories to raise questions as to whether learning occurs gradually or all at once.

Like Thorndike and Pavlov, Guthrie endorsed the idea that psychology should be an objective science. But he was less interested than either in the physiology of psychological processes, arguing that psychology should stand alone as a science and that the terms of investigations should be psychological in nature. Thinking that the psychologist's role should be to determine how learning occurs rather than what is learned, he was especially critical of Thorndikes's law of effect because he maintained that it focuses on the product rather than the process of learning. (Snelbecker, 1974)

Instead of a reinforcement explanation, Guthrie asserted that a response occurring in a stimulus context would suffice for the stimulus to control the response which just occurred there. He further concluded that learning involves an all-or-none status, in which learning occurs full-strength on one trial, rather than being strengthened as a result of practice. This learning concept, in which learning is a sudden process, is known as simultaneous contiguous conditioning. The mechanism of conditioning is stimuli change, not drive reduction. (Bigge, 1982)

Guthrie thought that what really happens during "practice" is that the organism notes more aspects of the stimulus situation and associates them with more aspects of the response.

Closer analyses would lead to the conclusion that many associations are formed and these occur full strength when responses are made in the pressure of stimuli noted by the subject. (Snelbecker, 1974)

This aspect of Guthrie's one-trial conditioning has been incorporated by some of the contemporary learning theorists. Guthrie provided the framework for thinking of learning processes as involving a variety of stimuli and a variety of responses. Although Guthrie's work did not lead to a cluster of psychologists known as "Guthrienians," it is still discussed and his influence is still evident. (Fincher, 1985)

Clark L. Hull, the most influential learning theorist of the 1930s and 1940s, believed that science has two equally important and inseparable components - the empirical or fact-gathering phase and the theoretical or synthesizing phase. He thought the best way to build a science is to formulate a set of assumptions sufficient to explain the fundamental aspects of behavior and logically derive any principles from these fundamental assumptions for continuing empirical testing and modifications of the theory.

Hull wished to construct a total theory of behavior. He saw learning processes as so fundamental that he used his learning concepts as a major point of departure in forming

his more general theory of behavior. He held heredity responsible for initial stimulus-response relationships, but he thought that an individual's ability to adapt to his environment depends on modification of stimulus-response association based on its coping successes. (Snelbecker, 1974)

Like most other stimulus-response and conditioning theorists, Hull posited that complex forms of learning could best be understood through the fundamental composition of stimulus-response relationships. He theorized that effects of responses influence subsequent behavior when goal attainment causes gratification and reduction of the motivating drives of the organism. He believed that learning takes place and is stamped in through the process of repeated need or drive stimulus reductions. Because he subsequently focused on the internal experiences associated with such drives, his theory is frequently called a "drive-stimulus-reduction" theory. (Bigge, 1982)

Despite Hull's emphasis on observable happenings, he was greatly concerned with the internal states of an organism. Some authors have named his theory S-O-R rather than just S-R, with the additional "O" referring to organism, and indicates that an individual's behavior cannot be predicated simply on the stimuli present. According to Fincher, Hull's system has been most productive in stimulating experimental inquiry into the problems and issues of learning. (Fincher, 1985, p.71)

B.F. Skinner was influenced by the work of both Pavlov and Thorndike, having used an inductive approach to construct his theory. His is a strictly engineering type of science and devoid of theory - a science of overt behavior and only overt behavior. (Bigge, 1982) Skinner believes in waiting until all the evidence is in; he criticizes Hull's hypothetico-deductive approach because, he contends, it frequently leads to premature and misleading theorizing. He believes best research results are obtained if one's efforts are guided by empirical evidence rather than by preconceived notions and expectations.

Skinner does not favor reliance on statistical summaries of a group of subjects. He states that the only sound approach is through experimental manipulation of conditions and observations of changes in each subject's behavior since there is no "average" person or animal. Instead of short periods of observing many subjects, he favors careful and prolonged study of each until lawful relationships between conditions and behaviors can be established. (Snelbecker, 1974)

It is Skinner's contention that the kinds of learning which are of greatest importance in real-life situations are typified by Thorndike's law of effect. He acknowledges two types of learning - classical, or respondent conditioning controlled by eliciting stimuli, and operant, or "instrumental" conditioning

controlled by the effects of the behavior upon the environment.

In this sense "operant" is defined as a set of acts that constitutes an organism doing something, called "operant" because the behavior operates upon the environment and generates consequences. (Bigge, 1982) One of his reasons for choosing "operant" rather than "instrumental" conditioning (preferred by some psychologists) is that "instrumental" is too suggestive of purposiveness on the organism's part. (Snelbecker, 1974) Skinner believes that research can study only correlations between stimuli and responses and not the "make-believe" psychology of intervening physiological mental links between stimulus and response. Humans are neutral and passive; all their behavior can be explained sequentially and mechanistically, according to Skinner. (Bigge, 1982) Skinner's friends say he deals with the "empty organism." (Bigge, 1982)

Many consider Skinner's position to be one of the major learning theories of the 1930s and 1940s but which declined in importance by the mid-century. But since the 1950s there has been a resurgence of interest in Skinnerian psychology - possibly because Skinner is alive and, until recently was still working. Another possibility is that his approach to research and theory construction is consistent with basic and applied psychological concepts at mid-century and later, such as the learning theory of

Robert Gagne, discussed next.

More than any other learning psychologist, Robert Gagne has tried to identify conditions under which learning takes place. In Gagne's view, learning occurs when external events in the form of stimuli and internal events in the form of memories affect the learner and so result in a change in performance.

Instruction is defined as deliberately planned and arranged external events. The internal events that cause changes in performance are explained using an information-processing model of learning and memory. (Fincher, 1985)

Gagne describes five varieties of capabilities: (1) intellectual skill-dealing with the environment symbolically; (2) verbal information - being able to state ideas; (3) cognitive strategies - the controls of a learner's internal processes; (4) motor skills; and (5) attitudes - mental states which influence choices of action.

The events of learning are: (a) sensory attending and selective perception, (b) storage in short-term memory, (c) encoding, (d) storage in long-term memory, (e) retrieval and response generation, and (f) feedback or reinforcement. (Gagne, 1977)

Gagne has been concerned with the educational implications

What is your opinion on the behavioral learning theories?

of his research. By defining instruction as he does - deliberate arrangement of conditions for learning - he strongly emphasizes instructional planning, design, management and development. Gagne's most pertinent emphasis may be that he gives to the structure an organization of instruction and the advantages of dividing and breaking down learning tasks into their less complex components. The advantages of this approach for teaching underprepared college students are apparent. (Fincher, 1985)

The Gestalt Learning Theories

It has been mentioned that the gestalt schools formed in Europe around the turn of the century and in the first decade as a response and reaction to the reductionism advanced by the American behaviorists and conditioning psychologists. The gestalt group thought that psychological analysis of any process, including learning processes, should be designed and carried out so as to lead to understanding of all the features of a person, both natural and functional components - to understand their part in the functioning of the subject.

The gestalt psychologists characterize humans as capable of seeing meaning and structure in their world, and believe that behavior sometimes is determined by emotional needs or drives,

while other times it is shaped by environmental stimuli, or both. But the gestalts maintained that the larger concern in learning psychology should be understanding man's ability to see meaningful relationships and structure rather than merely to identify how humans act "blindly," influenced as humans are by compelling emotional states and environmental conditions. (Snelbecker, 1974) Further, means should be found to measure how humans experience situations and find those factors which make it possible for humans to best cope with their environment.

A good illustration of some gestalt characteristics is "unsightful learning" - the phonemenon Kohler described when his chimpanzee Chica stacked boxes to reach a banana attached to the ceiling. (Bigge, 1982) When faced with problems, subjects frequently try many solutions in va[illegible] when suddenly, (frequently after a period of inactivity and reflection) they quickly identify the critical acts and solve the problems. This is the "Aha!" experience we all have had.

The gestalt psychologists chose perception principles as their primary means for describing learning processes. Insightful learning was seen as perceptual reorganization in which the subject first fails and then succeeds at learning, developing different ways of perceiving the problem.

Max Wertheimer is usually identified as the founder of gestalt

psychology, with his seminal views extended by Kurt Koffka, Wolfgang Kohler, Kurt Lewin and others. They all described learning as change through perceptual reorganization. Wertheimer posited that the organized whole is greater than the sum of its parts; a triangle is greater than three straight lines coming together; humans must be studied in their totality. (Bigge, 1982) From Wertheimer comes the gestalt concept of "closure" - the tendency of the mind to close a curved line that does not quite meet, and see a circle in the mind's eye.

Edward C. Tolman advanced a theory of "purposive behaviorism," embodying concepts of both behaviorism and cognitive concepts. Tolman also maintained psychology to be a science and promoted a balanced view of it between the physiological and metaphysical extremes offered at that time.

Even though he recognized the physiological stimuli to learning and behavior, he identified internal cognitive processes as the main determiners of behavior and the central focus for psychology as a science. He identified his learning theory as a subvariety of the gestalt approach but he rejected introspection as a research method and emphasized the need to relate mental states to situations and behavior. In his writings he consistently emphasized that learning is more than observable movements, and that the <u>real</u> learning process is a central, cognitive operation. (Snelbecker, 1974)

Cognitive - field learning theory, embodied in the work of

Morris L. Bigge, centers around a person's interaction with his/her contemporaneous psychological environment. This theory is a synthesis - neither an unfoldment and expression of inner urges, nor a conditioning process, but instead Bigge contends that the meaning of learning lies in a situation in which a person and his psychological environment come together in a psychological field or life space.

According to Bigge (1982), "The basic thesis of cognitive-field psychology is to formulate tested relationships that predict peoples' behavior in their life spaces. A person and his/her life space are a pattern of interdependent factors and functions, acting and reacting together in a pattern of simultaneous mutual interaction. Within cognitive-field theory, learning is an interactive process within which a person can reach new insights or cognitive structures or change old ones.

Like Gagne, Bigge proposes a model for teachers. He maintains that teachers must understand not only their students but also themselves. The cognitive-field oriented teacher wants more than an observable behavior change. He (she) wants students to increase their self-understanding and their understanding of their psychological world, as well as significant problems and processes. (Bigge, 1982)

In a study of college students William G. Perry has identified nine stages of intellectual and ethical development. Concepts and

values apparently evolve from dualistic, right-or-wrong distinctions through a stage of skeptical and existential relativism to a stage of commitment where choices and decisions are made and a sense of personal identity is achieved. (Perry, 1970)

The first three stages view answers to questions of knowledge and values as dualistic - this is, answers are known and the learner is a vessel to receive them. Academic tasks requiring recognition of differing points of view are difficult for the learner, as is using his (her) own opinion. Uncertainty is an error of some kind.

Positions 4, 5 and 6 view questions of knowledge and values as contextual. Uncertainty prevails; one theory or opinion is as good as another. The learner may feel lost and alone, may question the foundation of meaning in his (her) life. Non-obsolete criteria for making judgments in context are found and used, and learners become aware of the need to make commitments without certainty.

In the last three stages (considered by Perry to be positions of psychological rather than cognitive-structural development) the learner gradually accepts self-responsibility and establishes an identity by acts of commitment and developmental task resolution. First the learner selects a career, marriage partner, life style, or a set of values. Next, the learner realizes and accepts that

there are parodoxical and sometimes conflicting themes within himself. Reassessment and change will be necessary throughout life.

Perry's scheme represents not only a set of cognitive structures representing different ways of perceiving, organizing and evaluating knowledge and values. It also reflects different ways of learning; persons at different stages on the Perry scheme may learn better in different environments.

Perry declares that his stages are sequential, hierarchial, and qualitatively different. That is, they occur one at a time in the same order. Each successive stage includes all the previous stages' rationales, and the successive changes are not aiding "more of the same" but are changes "to a different thing." (Rodgers, 1982, p.2)

The implications for instruction are, first, teachers need to be aware of the different stages of cognitive and intellectual development of their students; and second, provide a variety of learning activities so as to challenge those higher on the scheme and, at the same time, not frustrate and confuse further those in the dualistic stages.

The Leading Theories of Career Development

Work plays an important role in human endeavors, and the work humans choose and the way they choose their work is the "proper study of mankind." According to Erik Erikson (1950), Freud once stated that the most significant indication of a psychologically normal person was the ability "to love and to work" effectively. (Osipow, 1983, p.37)

The study of vocational choices is a natural offshoot of the study of learning, since ideally, work is almost universally agreed to be a manifestation of the human's full gamut of needs, goals, strengths and personality characteristics in Western cultures. To study the chief theories of vocational choice or career development, four distinct approaches to defining and discussing this issue present a practical pattern for discussion. They are the trait-factor, developmental/self concept, personality, and behavioral theories of career development.

Trait-factor theories. The oldest approach, starting with Frank Parsons, is commonly called the trait-factor approach. The system supposes that a straight-forward matching of skills and interests to job choices is all that is needed to solve the problem of vocational choice. Parson's Choosing a Vocation (1909) dominated the field of vocational counseling until the 1930s and

1940s. (Crites, 1978) E.G. Williamson and D.G. Paterson of the University of Minnesota carried this theory further to the development of the "Minnesota" tests of clerical aptitude, manual dexterity, spatial perceptions, etc. Other vocational and interests inventories have evolved from this theory - the General Aptitude Test Battery, Kuder Preference Record, the Strong Campbell Interest Inventory, to name a few.

The trait-factor theory of career development is based on the following premises: first, individuals have unique patterns of capabilities and potentials (traits). Second, these traits are correlated to requirements of different jobs. Third, testing is the best way to predict future job success. Fourth, each person needs to identify his own traits to find a way of working and living to best use his (her) capabilities effectively. (Parsons, 1909)

Critics of trait-factor career counseling contend that it is too simplistic and does not take into account work values orientation. They state that too much emphasis on the cognitive masks the importance of feelings in vocational decision-making; a clear-cut example of behaviorist/gestalt dissonance.

But with its limitations, why has trait-factor career counseling persisted? One reason is that it provides neat, crisp "matches" between clients and careers and is a useful starting point for counseling which may very well proceed into the affective domain.

Another is that it is a useful approach for clients still in the dualistic stages of decision-making as described in Perry's scheme (to be discussed). Currently the trait-factor model has been absorbed into many other approaches to career counseling, thought few practitioners are pure trait-factor adherents.

The Developmental/Self Concept Theory. This approach is exemplified in the work of Donald Super and Eli Ginzberg.

The central theses are: (1) individuals develop more clearly defined self-concepts as they grow older, although these vary to conform to one's view of reality as correlated with aging; (2) people develop images of the occupational world which they compare to their self-image in making career decisions; (3) The adequacy of the eventual career decision is based on the similarity between an individual's self-concept and the vocational concept of the career eventually chosen. (Osipow, 1983)

No one has so intricately woven developmental hypotheses as successfully as Donald E. Super. Probably the major figure in vocational choice theory, he has worked extensively over a long period of time and has conducted research on both sides of the Atlantic. (Gothard, 1985)

Super's developmental approach is founded on five life stages, summarized as follows: Stage One-Growth, birth to 14. Fantasy predominates in thinking about occupations, but interests and skills

enter the picture from age eleven on.

Stage Two: Exploration - from 15-17 tentative choices are tried out in discussions, work and fantasy. Between ages 18-21, the transition phase, reality factors are given more attention as the individual enters work, training or further education. During the trial period, 21-24, a choice is tried out.

Stage Three: Establishment - from 24-30 trial jobs are tested for suitability. From 31-44 a pattern emerges and the individual secures his (her) work position.

Stage Four: Maintenance - the work position is consolidated between ages 44-65.

Stage Five: Decline - the worker's work role is reduced or retirement occurs from age 65 on.

Osipow regards Super's theory as a "well ordered, highly systematic representative of the process of vocational maturation." (Osipow, 1983, p.185) It fits into the cognitive-field school of the gestalt learning theories because of Super's emphasis on maturing and the inner processes involved. Super also asserts that development through the life stages can be guided, partly by aiding in reality testing and in self-concept development. (Gothard, 1985)

Eli Ginzberg et al are credited with being the first to emphasize the developmental aspects of occupational choice.

First, a reality factor causes the individual to respond to environmental pressure when making vocational decisions. Second, education will influence career direction because one's amount and kind of education will limit or enhance his flexibility and choice of vocations. Third, emotional factors are involved in an individual's responses to his environment since personality and emotional factors have environmental accompanying circumstances. And fourth, individual values are important in vocational choice. They influence the quality of career choices because of differing values in different careers. (Osipow, 1983)

Ginzberg's theory led to the following conclusions: (1) occupational choice is irreversible; (2) it occurs in reasonably clearly marked stages; and (3) it involves a series of compromises between wishes and possibilities.

Individuals move through three stages. The first stage, the fantasy period, lasts until age eleven. Career choices are arbitrary, lack reality, and are based on needs and impulses.

The second stage lasts until about age seventeen and is called the tentative stage. Children begin vocational exploration, asking themselves what they're interested in and what they like to do. They become aware that they are better at some things than others, and begin thinking about their abilities related to careers. Third, the realistic period begins

at about age seventeen with likes and dislikes integrated with skills and values. This stage incorporates sub-stages of exploration, crystallization and specification, and can occur over as many as 15 years. (Osipow, 1983)

By 1972 Ginzberg had modified his theory, concluding that the choice process is lifelong and open-ended, and that irreversibility is no longer valid, with individuals keeping their options open as long as possible. (Gothard, 1985)

Vocational Choice and Personality Theories. The works of Anne Roe and John Holland exemplify this approach.

A clinical psychologist, Anne Roe became involved in career development through doing research on the personality traits of artists. Roe concluded that major personality differences exist between physical/biological and social scientists, primarily in their interactions with people and things.

Fundamental to her theory is the basic assumption of the importance of early childhood experiences, and an inherited tendency to expend energy in a certain way. These two factors combine to mold the style the individual uses to satisfy needs. The resulting style has specific and major implications for career behavior. (Osipow, 1985)

Roe's research utilized Maslow's hierarchy of needs to help explain the part that needs play in occupational choice.

Basic needs are based on childhood experiences. The following are proposed: First, needs that are routinely satisfied do not become unconscious motivators. Second, higher order needs disappear entirely if they are rarely satisfied. Lower order needs will predominate. Third, needs satisfied after an unusual delay will become unconscious motivators. (Gothard, 1985)

Roe identifies three types of child-rearing practices - first, a range of emotional concentration on the child from overprotection to overdemandingness. Second, two extremes of emotional rejection and neglect comprise avoidance of the child. Third is acceptance, either casual, by default, or by loving noninterference. Arising from this childhood relationship is an occupational classification based an orientation toward or away from people. There are four people -oriented occupational areas - service, business organization, general cultural, and arts and entertainment. The other three are non-people oriented-technology, outdoor and science. (Gothard, 1985)

Osipow (1983) states that Roe's theory attends to very important aspects of vocational selection. Needs Development influences the general vocational context, that is, toward or away from others. Early environmental factors that influence needs development are specified. Normal development is indicated, as well as misdirected development.

In his theory of career development, John L. Holland elaborates on the hypothesis that career choices represent an extension of the personality and an attempt to incorporate personal styles into one's choice of work. His underlying assumptions are: (1) Most people can be categorized as one of six types - realistic, investigative, artistic, social, enterprising, or conventional, (2) There are six types of environments, matching the six personality types. As similar personality types congregate, they create an environment typical of their type, (3) People search for environments that will let them exercise their abilities, express their attitudes and values, and take on agreeable roles, and (4) A person's behavior is determined by interaction between his personality and his environment. (Holland, 1981)

Holland states that a person's primary direction of career choice is determined by the model choice he most resembles. However, individuals also have a secondary position which helps to determine the choice of role within the environment. Holland perceives the realistic and investigative types as more stable in their choices, while enterprising, social and artistic types have higher aspirations.

Holland's "Self-Directed Search" is a widely used interest inventory which enables its users to identify their occupational

style or type and relate it to careers. The instrument and the theory are practical for those who need structure and answers in their career development needs. The user can use the results as a springboard for further exploration and decision-making.

Holland's critics charge that his approach is superficial and sexist and that his theory does not account for how people become the types they are. Holland contends that this approach allows many more to have access to career guidance than is available on a one-on-one basis, and that his theory is not sexist if used correctly. (Holland, 1978)

Behavioral Approaches to Career Development Theory

It is more accurate to refer to the model for this approach in the plural than in the singular. Although they share common antecedents in experimental learning psychology there are two distinct orientations in behavioral career development - the indirect, which focuses on linguistic mediational variables which precede and elicit overt responses, and direct, which emphasizes the consequences of responses - whether they are followed by a reward or punishment. Another distinction can be drawn between the two emphases within direct behavioral counseling, labeled behavioral-theoretic and behavioral-pragmatic. The former draws from concepts

and principles from learning theory to explain vocational behavior and to develop counseling methods for changing them; the latter proceeds more inductively and empirically to identify those techniques that "work" in effecting behavioral change. The spokesmen for the two avenues of behavioral career counseling are L.D. Goodstein for the theoretic, and J.D. Krumboltz and C.E. Thoresen for the pragmatic. (Crites, 1978)

Goodstein (1972) gives a central role to anxiety in the origin of behavioral problems in general and career choice problems in particular. He analyzes in detail the part anxiety plays in career indecision, both as an antecedent and a consequence. He distinguishes between simple indecision and pervasive and chronic indecisiveness: the principle factor in simple indecision is lack of information about self and work because of limited life experiences. Anxiety arises from not having chosen an appropriate vocation and in this case anxiety is the consequence.

In contrast, indecisiveness comes from long-standing anxiety associated with decision-making, frequently attributed to domineering or over-demanding parents. For this individual, often paralyzed in making any kind of choice, anxiety often follows inability to make career decisions and becomes both an antecedent and a consequence, compounding feelings of inadequacy and frustration.

Krumboltz and Thoresen, on the other hand, seldom mention

anxiety in their pragmatically oriented model. They prefer "behavioral analysis" or "problem identification," and they relate these closely to counseling goals. Thus, if the client has "no career choice," then the goal is to make a career choice. They identify seven categories of problems: (1) problem is someone else's behavior, (2) problem is expressed as a feeling, (3) problem is absence of a goal, (4) problem is that the desired behavior is undesirable, (5) problem is that client does not know that his behavior is inappropriate, (6) problem is a choice conflict, and (7) problem is a vested interest in not identifying any problem. Of these problems, those which bear most directly on career counseling are indecision (absence of a goal), unrealism (expressed feeling about too high aspirations), and choice conflict among alternatives.

In the theoretic view, if it can be determined that the anxiety precedes the decision-making problems, then steps are taken to eliminate the anxiety through counterconditioning. In simple indecision, however, career counseling begins with instrumental learning.

Krumboltz and Thoresen declare that any set of counseling goals, including career counseling, should (1) be capable of being stated differently for each client, (2) should be compatible with, but not necessarily identical to, the values of the counselor, and (3) the degree of attainment of the

goals should be observable. (Crites, 1978)

Critics of behavioral counseling call it too "cookbookish" and unduly specific and they question its usefulness in terms of broader goals and values, especially the "self-actualization" of the client. The behaviorists reply that they endorse fully ideals such as "self-actualization," but "as a counseling goal, the abstract and ambiguous terminology makes it difficult for clients or counselors to know what they are trying to do or when they have succeeded." (Krumboltz and Thoresen, 1969, p.2)

Both the behavioral-theoretic and behavioral-pragmatic approaches emphasize the anxiety/need state in the individual; Goodstein would reduce the anxiety state by behavioral strategies including instrumental conditioning, counterconditioning and desensitization where Krumboltz and Thoresen work to help their clients improve "deficient decision-making skills."

These, then, are some of the major theories of career development - (1) trait-factor theory, (2) developmental/self-concept theory, (3) personality theory, and (4) behavioral theory. Three of the four - trait-factor, development/self concept and personality theories - have ties to the gestalt school because of the emphasis on the individual's relationship to the environment - interacting, feeling, discovering, having positive and negative emotions, having insights and forming opinions. Ann Roe's personality theory of career development

drawing from Maslow's hierarchy of needs and emphasizing child-rearing practices as shapers of peoples' orientation toward or away from people, is exeptional among the other primarily gestalt-cognitive field theorists, but since she integrates the concept of acting in response to and interacting with the environment her theory exhibits components of both.

Goodstein's, and Krumboltz and Thoresen's behavioral theories embody behavioral concepts in their portrayal of the client as a reactor, in a need/anxiety state or problem identification made because of early conditioning. Counseling techniques emphasize reinforcement of desired values and behaviors, counterconditioning, and desensitization to reduce self-defeating anxieties and deficient decision-making skills. (Crites, 1978)

The implications for career educators in two-year colleges involve several issues: first, the need to serve masses of full-time and part-time students of all ages and, in some cases, with various disadvantages, handicaps and special interests. The second issue is providing career development to students spread all along the maturity spectrum from early dualism to commitment on the Perry scheme. Third is cost, with two-year colleges in a retrenhment mode and likely to cut student services funding.

Taking all these factors into account, it appears that what is needed is a simple delivery system of career planning

services, useful to individuals or groups with the capacity for simple or complex interpretation, depending upon user maturity. To all these ends, John Holland's Self-Directed Search with its self-administration, self-scoring and self-interpretation seems suitable for reaching large numbers of students who will never take career planning courses or avail themselves of individualized career counseling. The theory upon which the Self-Directed Search is based combines trait-factor and personality career development theories. The outcomes of the instrument can be used for individual or group interpretation and can be discussed at face value for the dualists - "These occupations are the ones that people who have interests and skills similar to yours tend to enter and find satisfying, etc." or used as a springboard for career decision-making, exploring all the complexity and ambiguity inherent in the process, which, in its entirety, "is far more an art than a science." (Figler, 1979, p.iii) An added advantage is the availability of a simpler form - Form E - for poor readers or students for whom English is a second language.

In the final analysis, then, all two-year college educators who help students with career decision-making or career-planning should be aware of the theoretical bases of modern career development practices and be prepared to work with their students individually, in groups, or by referral, to best aid their growth and development.

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